

PCT

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference XA1719	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/04209	International filing date (day/month/year) 30.09.2003	Priority date (day/month/year) 01.10.2002
International Patent Classification (IPC) or both national classification and IPC G01N17/04		
Applicant BAE SYSTEMS PLC et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 28.04.2004	Date of completion of this report 11.01.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Strohmayer, B Telephone No. +49 89 2399-2669 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/GB 03/04209**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-15 as originally filed

Drawings, Sheets

1-3 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 13

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 13

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the Standard.

☐ the computer readable form has not been furnished or does not comply with the Standard.

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-3,7-12,14,15
Inventive step (IS)	Yes: Claims	
	No: Claims	1-12,14,15
Industrial applicability (IA)	Yes: Claims	1-12,14,15
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/04209

X1=US5446369

X2=JP7113740

X3=JP1197629

X4=JP59159061

X5=JP59180433

X6=C.G.Moore: "Instrumentation for Measurement of the ...", 1995

X7=US4780664

PX8=US2003029232*

DA9=US5338432

* The following references to PX8 would be relevant only if the priority was not valid. The validity of the priority claim cannot be checked during preliminary examination.

1. The subject matter of claim 1 is anticipated by each of the following documents:

X1: see in particular Fig.1 and col.13,l.17-48, in particular col.13,l.43ff, which state: "The resultant patterns remaining on the surface of the ceramic substrate material included multiple sensors, each containing a reference element and sensing element ...". Fig.1 of X1 shows only a single such sensor containing a single sensor element and a single reference element in the same way in which Fig.4 of the application shows only a single sensor containing a single sensor element and a single reference element. But in the above paragraph X1 discloses explicitly a plurality of such sensors of different thicknesses.

X2: Fig.4, abstract and paragraphs 13,32 and claim 5 of X2; the composition varies in sensors 40, which are of the impedance spectroscopy and/or mass change type. Claim 1 does not only not exclude a preprocessing of the various sensor data before transmission to a central unit, a certain preprocessing is even considered in one embodiment of the application (compare also paragraph 17 and 33 and Fig.5 of X2 with p.14,l.24ff of the application).

X3: abstract; sensors 2-1,2-2,2-3 in Fig.1; sensors 21,22,23 in Fig.5-7; different influences shown in Fig.8,9; with respect to the processing of the sensor data within the unit see also discussion of X2 above.

X4: abstract and Fig.1; the tracks are formed on a Si substrate as in the application (application, page 4,l.4), the tracks are made of Al as in the application (application, page 10,l.24), the terminals are made from Au as in the application (application, page

4,I.20). That the microsensor of X4 is coated with a paint is not only not excluded by claim 1, but constitutes even one specific embodiment of the appl., see page 3, I.27-29. The different configurations of the various tracks implies that they are differently influenced by corrosive media. That the sensor is suitable for detecting corrosive media is not only implied by its constitution, but also explicitly mentioned in the last lines of the abstract.

X5: abstract; as in one embodiment of the application (paragraph bridging pages 12,13) a corrosion sensor, a humidity (time of wetness) sensor and a temperature sensor are provided in Fig.2 of X5. When interpreting claim 1 on the basis of said embodiment of the application such an arrangement anticipates claim 1.

X6: page 2, last paragraph to page 3, penultimate paragraph; claim 1 does not define that all sensors are provided on the same substrate (compare application p.15,I.11,12 and claim 14 of the current application).

X7: Fig.1,2; Fig.2 shows three "differently influenced" sensors: Resistance sensors in the form of unprotected track 66 and protected and thus less influenced track 86 and an LPR-sensor formed by plates 64,68,84,88 (compare the embodiment bridging pages 12,13 of the application, which is formed by a resistive and an electrochemical sensor).

PX8: Fig.7 and paragraphs 7,21,22,27,30, in particular paragraph 30.

2. The subject matters of the following dependent claims are likewise not new or not inventive:

claim 2 (not new): X1 (abstract); X4; X6; X7; PX8

claim 3 (not new): X1 (col.13,l.17-48); X4 (Fig.1); X6; X7; PX8

claim 4-6 (obvious): X1; X4

claim 7 (not new): X1 (col.13,l.17-48); obvious in X4

claim 8 (not new): X1 (aluminum and steel, col.13,l.17-48); X2 (paragraphs 13,32 and claim 5); X2; X3; X4; X6

claim 9 (not new): X1 (the different metallic compositions in X1 have necessarily different surface types); obvious in X2-X4

claim 10 (not new): X1 (col.13,l.1,2); X3 (abstract "voltage signal")

claim 11 (not new): X1 (col.13,l.43-48 and Fig.1); X6 (page 3); X7; PX8

claim 12 (not new): X1 (col.13,l.43-38 and col.4,l.57 to col.5,l.25); X5 (resistance 17)

claim 14 (not new): X1 (col.13,l.43-48 and col.13,l.7,8); X2 (Fig.4); X3; X4; X5; X7; PX8

claim 15 (not new): X1 (abstract); X2 (Fig.4); X3; X4; X5; X6; X7; PX8

3. The claims are obscured (Art.6 PCT) by contradicting passages of the description: Whereas dependent claim 12 defines in accordance with page 6,l.22 of the application, that the temperature sensor is a resistor, page 4, line 7 states in contradiction thereto that the temperature sensor is a thermocouple.

Whereas dependent claim 2 defines in accordance with page 6, line 12,13 and in accordance with the single electrode arrangement in Fig.1 that the sensor is an "electric resistance"-type sensor, page 4, line 5 and page 14, line 19 state in contradiction thereto that the sensor is of the "linear depolarisation resistance"-type, which would require two electrodes.

It appears that said erroneous passages on page 4 (lines 5-7) and on page 14 (line 19) should have been removed.